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EXAMINER	
UHLIR, NIKOLAS J	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

Office Acti n Summary	Application No. 09/749,917	Applicant(s) CHANG ET AL.	
	Examiner Nikolas J. Uhlir	Art Unit 1773	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 March 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17,19-36 and 39* is/are pending in the application.

4a) Of the above claim(s) *1-13* is/are withdrawn from consideration.

5)☒ Claim(s) *23 and 24* is/are allowed.

6)☒ Claim(s) *14-17, 19-22, 25-36 and 39* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Pri rity under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *14*.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. This office action is in response to the amendment/arguments dated 3/24/03. The applicants arguments and amendments have been carefully considered by the examiner and have been found to be persuasive in light of applicants amendments to claim 14, 16, 17, 21, and 34. Accordingly, the prior applied 102 and 103 rejections are withdrawn. However, the case is not in condition for allowance in light of the new grounds of rejection applied by the examiner in this office action.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

15,16
3. Claims 14, 19-20, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ding et al. (EP0845545).

4. It is respectfully noted that Ding et al. (Ding) was cited by the applicant in an information disclosure statement and so has not been included with this office action.

5. The limitations of claim 14 require a component of a plasma reactor, wherein the component is selected from the group consisting of a plasma confinement ring, a focus ring, a pedestal, a chamber wall, a chamber liner, and a gas distribution plate, wherein the component has one or more surfaces exposed to a plasma during processing, wherein the component comprises an as sprayed plasma sprayed coating on the plasma exposed surface of the component, wherein the coating has an as-sprayed surface roughness that promotes the adhesion of polymer deposits.

6. Regarding these limitations, Ding teaches a coating for plasma chamber parts, wherein the properties of the coating enhance the adhesion of material which is deposited onto it, such that the deposited material does not flake off of the coating and contaminate substrate that are processed in the chamber (column 3, lines 2-29). The deposition chamber of Ding comprises chamber walls 21, gas inlet 23, exhaust outlet 25, substrate pedestal 27, target 17, and substrate 19 (column 4, lines 22-33 and figure 1). During processing, plasma is generated from a process gas, and particles sputtered from the target 17 deposit on the substrate, the particle screen, and other equipment surfaces (column 4, lines 40-53). These particles are not strongly adhered to the plasma chamber parts, and tend to peel off and contaminate the substrate (column 5, lines 20-36).

7. To alleviate this problem, Ding teaches a specific embodiment wherein a plasma chamber part (specifically a particle screen) is coated with a plasma sprayed/arc sprayed/flame sprayed coating having a rough or non-uniform surface, which increases the adhesion of the deposited particles (column 5, line 37-column 6, line 21).

8. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize a plasma sprayed coating as the coating material in Ding, as this type of coating is recognized as equivalent to the other coating listed as suitable for this purpose.

9. Regarding the limitation of claim 14, wherein the applicant requires that the coating promote the adhesion of polymer deposits. Although ding does not specifically teach this limitation, the coating taught by Ding et al. is similar to the coating required by

claim 14, in that it is flame sprayed, has a rough surface, and increases the adhesion of particles deposited on its surface. Thus, because of these similarities, the examiner takes the position that the coating of Ding et al. will meet the requirement of promoting the adhesion of polymer deposits.

10. Further, regarding the limitation of claim 14 requiring the chamber component to be selected from the group consisting of a plasma confinement ring, a focus ring, a pedestal, a chamber wall, a chamber liner, and a gas distribution plate. It is acknowledged that Ding does not teach a specific embodiment wherein one of these components is coated with a plasma sprayed coating to increase the adhesion of particles. However, Ding teaches that particles sputtered from the target 17 collide with and deposit on both substrate 19 and particle screen device 15, "as well as on other equipment surfaces" (column 4, lines 48-53). As stated above, the other equipment present in the vacuum chamber includes the chamber walls.

11. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply a plasma sprayed coating to the surface of the chamber walls in the vacuum chamber of Ding.

12. One would have been motivated to make this modification due to the teaching in Ding that particles deposit not only on the substrate and the particle screen but also on "other equiment surfaces." Thus, one of ordinary skill in the art at the time the invention was made would expect particles to deposit on the chamber walls. One would have been motivated to coat the chamber walls with a plasma sprayed coating in light of the

teaching in Ding that coating a plasma chamber part with a plasma sprayed coating improves the adhesion of particles deposited on that part.

13. The limitations of claims 19 and 20 require the coating to be a ceramic or a polymer material, more specifically a ceramic selected from alumina, yttria, zirconia, SiC, SiN, B_4C, and B_4N. Ding teaches that the composition of the coating is selected based on the composition of the particles that will be deposited on it. In a specific example, Ding states that if aluminum is to be deposited, then aluminum should be utilized as the coating (column 5, lines 50-56).

14. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to coat the chamber walls of Ding with plasma sprayed aluminum.

15. One would have been motivated to make this modification due to the teaching in Ding that particles deposit on substrate, the particle screen, and other chamber equipment, the fact that the other chamber equipment in the chamber of ding includes the chamber walls, and the fact that Ding teaches that a plasma sprayed aluminum coating is suitable for improving the adhesion of particles to the equipment surfaces.It is the examiners position that the limitations of claims 19 and 20 are met when aluminum is utilized as the plasma sprayed coating, as it is well known in the art that a thin layer of aluminum oxide (alumina) forms on the surface of any exposed aluminum layer unless special precautions are taken to prevent this oxidation. As aluminum oxide is also known as alumina, the limitations of claims 19 and 20 are met.

16. The limitations of claim 26 require a plasma reactor having a component meeting the requirements of claim 14. This limitation is met as set forth above for claim 14.

17. The limitations of claim 34 require a component of a plasma reactor, the component having one or more surfaces exposed to the plasma during processing, the compnent comprising a coating formed by a process consisting essentially of plasma spraying a coating material on a plasma exposed surface of the component that has not been roughened, the coating being either a ceramic material selected from the group consisting of yttria, zirconia, alumina, silicon carbide, and boron carbide or a metallic material, the coating having an as sprayed surface roughness that promotes the adhesion of polymer deposits.

18. Ding teaches coating a particle screening device of a plasma chamber with a plasma sprayed coating in order to improve the adhesion of particles that deposit on the particle screen (column 5, line 37-column 6, line 21). Suitable plasma coating materials include plasma sprayed aluminum, titanium, and titanium nitride (column 5, lines 10-19).

19. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to coat the particle screen of Ding with plasma sprayed aluminum or titanium, as these materials are equivalent to the other materials listed as suitable for this purpose.

20. Although ding does not specifically teach this limitation, the coating taught by Ding et al. is similar to the coating required by claim 14, in that it is flame sprayed, has a rough surface, and increases the adhesion of particles deposited on its surface. Thus,

because of these similarities, the examiner takes the position that the coating of Ding et al. will meet the requirement of promoting the adhesion of polymer deposits.

21. Claims 14-17, 19-21, 25-29, 31-33, and 35-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Richardson et al. (US5916454) in view of Ding et al.

22. The limitations of claim 14 require a component of a plasma reactor, wherein the component is selected from the group consisting of a plasma confinement ring, a focus ring, a pedestal, a chamber wall, a chamber liner, and a gas distribution plate, wherein the component has one or more surfaces exposed to a plasma during processing, wherein the component comprises an as sprayed plasma sprayed coating on the plasma exposed surface of the component, wherein the coating has an as-sprayed surface roughness that promotes the adhesion of polymer deposits.

23. With respect to these limitations, Richardson teaches with respect to these limitations, Richardson et al. teaches a method for reducing byproduct generation in a plasma-processing chamber. The method includes providing a chamber interior part that has a roughness specification designed to promote the adhesion of byproduct particles to its surface (column 2, lines 25-32), specifically polymer particles (column 5, lines 5-1). Examples of suitable chamber interior parts that can be roughened include the chamber walls and a gas injection port (column 6, lines 33-43).

24. Richardson et al. fails to teach a coating for a plasma chamber part, wherein the coating has an as-sprayed surface roughness that promotes the adhesion of polymer deposits, as required by claim 14.

25. However, Ding teaches forming a plasma sprayed coating over the surface of plasma chamber parts to improve the adhesion of particles deposited on its surface (column 5, lines 37-56 and column 6, lines 19-21). The coating composition reduces intrinsic stress between the chamber part and the deposited particles thereby increasing the adhesion of the coating particles to the chamber part, and preventing the contamination of substrates processed in the chamber (column 5, line 57-column 6, lines 15-21). In addition, Ding et al. teaches that applying this coating to chamber parts that have been previously roughened improves the adhesion of the plasma sprayed coating to the chamber part itself (column 6, lines 41-45).

26. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to coat the surface of the chamber walls or gas injection port of Richardson with the plasma sprayed coating taught by Ding.

27. One would have been motivated to make this modification for the following reason: Although Richardson teaches that roughening the surface of a plasma chamber part is sufficient to increase the adhesion of particles to its surface, Ding teaches that by further coating the surface of a roughened chamber part with a plasma sprayed coating, intrinsic stresses between the deposited particles and the chamber part can be relieved, thereby **further** improving the adhesion of the particles to the chamber part. One would have been further motivated in light of the fact that the roughened chamber part of Richardson is an ideal substrate for the coating of Ding, as Ding teaches that roughening the component of the reactor prior to applying the plasma sprayed coating improved the adhesion of the plasma sprayed coating to the substrate.

28. The limitations of claim 15 require the component to be made from a metallic or a ceramic material. With respect to these limitations, Richardson teaches that the chamber walls are suitably manufactured from anodized aluminum, which is a known ceramic material (Al_2O_3) (column 3, lines 50-55). Thus, the limitations of claim 15 are met when the walls of Richardson are coated with the plasma sprayed coating of Ding.

29. The limitations of claim 16 require a component of a plasma reactor, the component comprising aluminum having an anodized or un-anodized plasma exposed surface, wherein the component comprises an as-sprayed plasma sprayed coating on a plasma exposed surface of the component, wherein the coating has an as-sprayed surface roughness that promotes the adhesion of polymer deposits. These limitations are met as set forth above for claim 14.

30. The limitations of claim 17 require the component to be manufactured from a ceramic selected from alumina, zirconia, yttria, silicon carbide, silicon nitride, boron carbide, and boron nitride. These limitations are met as set forth above for claim 16, as anodized aluminum has the formula Al_2O_3, which is also known as alumina.

31. Regarding the limitations of claims 19 and 20, wherein the applicant requires the coating to be a ceramic or a polymeric material (claim 19), specifically ceramics such as alumina, yttria, zirconia, silicon carbide, silicon nitride, boron carbide, and boron nitride. Ding et al. teaches that a suitable coating composition form improving the adhesion of particles is plasma sprayed aluminum (column 5, lines 37-56). Thus, as aluminum is known to form a thin layer of aluminum oxide on its surface unless special precautions are taken to prevent this oxidation, the examiner takes the position that the limitations of

claims 19 and 20 are met, as aluminum oxide has the formula Al_2O_3, which is also known as alumina.

32. The limitations of claim 21 require a component of a plasma chamber part, wherein the component is coated with a plasma sprayed coating having an as sprayed surface roughness that promotes the adhesion of polymer deposits, wherein the component and the coating comprise the same ceramic material, wherein the ceramic material is selected from alumina, yttria, zirconia, silicon carbide, silicon nitride, boron carbide, and boron nitride. The limitations of this claim are met as set forth above for claims 19 and 20.

33. The limitations of claim 25 require the coating to have an arithmetic mean surface roughness of 150-190 microinches. Richardson et al. discloses that plasma reactor components are typically manufactured to maximize their smoothness, because this allows for a tight seal with other parts, easy cleaning, and low moisture absorption. However, this leads to increased particle contamination (column 5, lines19-35). The amount of particle contamination is reduced by roughening the surface of a chamber component, thereby increasing the adherence of byproduct particles to the component surface (column 5, lines 43-48). Thus, the examiner takes the position that the surface roughness of a plasma reactor interior component is a results effective variable. One would roughen the surface to improve byproduct adhesion, and one would smooth the surface to promote easy cleaning and low moisture absorption. Therefore, it would have been obvious to one with ordinary skill in the art at the time the invention was made to optimize the roughness of the coated interior components taught by Richardson as

modified by Ding to a desired range in order to achieve the desired balance between increasing the adhesion of byproduct particles and seal, cleaning, and moisture absorption properties.

34. The limitations of claim 26 are met as set forth above for claim 14.

35. The limitations of claim 27 require a method for processing a substrate in the plasma reactor of claim 26, wherein the method comprises contacting the exposed surface of a substrate with a plasma. Richardson et al. teaches exposing the surface of a substrate to a plasma (column 4, lines 35-52). Thus, the limitations of claim 27 are met by the combination of Richardson et al. with Ding et al.

36. Regarding the limitations of claim 28, wherein the applicant requires a method for processing a substrate in a plasma chamber, the method comprising positioning the substrate onto a substrate support in the reactor; introducing a process gas into the reactor; applying RF energy to the process gas to generate a plasma adjacent an exposed surface of the substrate; and etching the exposed surface of the substrate. Richardson teaches a method for processing a substrate comprising all of the required steps of claim 28 at column 4, lines 35-53. Thus, the limitations of claim 28 are met by the combination of Richardson et al. and Ding et al.

37. The limitations of claim 29 require the process gas to comprise a polymer forming species. Richardson et al. teaches a specific process gas that forms carbon-based polymers when the gas is used in a processing chamber (column 5, lines 1-11). Thus, the limitations of claim 29 are met.

38. The limitations of claim 30 require the substrate to comprise a metallic material or an oxide. Richardson specifically teaches that the use of plasma chambers to process glass substrates is known (column 1, lines 13-15). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize a glass substrate in the process chamber of Richardson as modified by Ding. As glass is primarily made of SiO_2, the limitations of claim 30 are met.

39. The limitations of claim 31 require the component to be a gas distribution plate, and further requires the process gas to be introduced through openings in the gas distribution plate. Richardson et al. teaches that the process gas is introduced through a gas injection port, which is a ring shaped manifold (gas injection port) having a plurality of holes for releasing gaseous source materials (column 3, line 65-column 4, line 5). It is the examiners position that this ring shaped manifold is equivalent to the applicants claimed gas distribution plate. The obviousness of coating the gas injection port is established as set forth above for claim 14.

40. The limitations of claim 32 require the component to comprise a ceramic material. This limitation is met as set forth above for claim 17.

41. The limitations of claim 33 require the coating to be a polymeric material. The examiner acknowledges that neither Richardson et al. nor Ding et al. specifically teach this requirement. However, Ding et al. specifically teaches that the coating material is adventitiously formed to be similar, if not identical to the material that is deposited on it. I.e. if aluminum is deposited, the coating is flame sprayed aluminum (column 5, lines 50-55 of Ding et al.). By doing this, the differences between the coefficient of thermal

expansion of the coating and the deposited material can be reduced, thereby increasing particle adhesion (column 5, line 50-column 6, line 9). Richardson et al. teaches an embodiment wherein a certain process gas results in the deposition of carbon based polymers on the surface of the plasma chamber parts (column 5, lines 1-11 of Richardson et al.).

42. Therefore it would have been obvious to one with ordinary skill in the art at the time to utilize a plasma sprayed polymer coating on the rough surfaced plasma chamber part taught by Richardson et al.

43. One would have been motivated to utilize polymeric material as the coating material taught by in this particular situation due to the fact that the deposited material of Richardson is a polymer material, and the fact that Ding et al. specifically teaches the coating should be similar or identical to the material that is expected to be deposited on it in order to reduce the effects of intrinsic stress between the deposited material and the component and the effects of thermal stress between the deposited material and the plasma sprayed coating, thereby increasing the adhesion of the deposited material.

44. The limitations of claim 35 require the coating material to comprise a material selected from yttria, alumina, zirconia, silicon carbide, and boron nitride. These limitations are met as set forth above for claims 19 and 20.

45. The limitations of claim 36 are met as set forth above for claim 19 and 20.

46. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ding as applied to claim 34 above, and further in view of Richardson.

47. Ding as set forth above for claim 34 does not teach limitations of claim 29, wherein the applicant requires the coating of claim 34 to have an arithmetic mean surface roughness between 150 and 190 microinches.

48. However, Richardson et al. discloses that plasma reactor components are typically manufactured to maximize their smoothness, because this allows for a tight seal with other parts, easy cleaning, and low moisture absorption. However, this leads to increased particle contamination (column 5, lines19-35). The amount of particle contamination is reduced by roughening the surface of a chamber component, thereby increasing the adherence of byproduct particles to the component surface (column 5, lines 43-48). Thus, the examiner takes the position that the surface roughness of a plasma reactor interior component is a results effective variable. One would roughen the surface to improve byproduct adhesion, and one would smooth the surface to promote easy cleaning and low moisture absorption.

49. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to control the roughness of the plasma sprayed coating of Ding to a desired range in order to achieve a desired balance between particle adhesion and seal, cleaning, and moisture absorption properties.

50. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Richardson et al. as modified by Ding et al. as applied to claim 14 above, and further in view of Shih et al. (US6120640).

51. Richardson et al. as modified by Ding et al. does not teach a coating that has a thickness between 2-5mils or 5-10mils, as required by claim 22.

52. However, Shih et al. teaches plasma sprayed boron carbide coatings for plasma chamber parts (column 5, lines 15-21 and column 7, lines 20-30). This coating is formed to provide increased durability to the plasma-exposed surfaces of interior components in plasma reactors (column 5, lines 14-15). Specifically, these coatings are applied to surfaces of plasma chamber parts that are formed from anodized aluminum that has been roughened prior to coating (column 5, lines 33-42). The thickness of the boron carbide coating is typically between 5-10mils (column 8, lines 20-21).

53. Therefore it would have been obvious to one with ordinary skill in the art to use the 5-10mil thick plasma sprayed boron carbide coating taught by Shih et al. as the coating material for the plasma chamber parts taught by Richardson et al. as modified by Ding et al.

54. One would have been motivated to make this modification due to the teaching in Shih et al. that plasma coating the surface of aluminum oxide based plasma chamber parts with a layer of boron carbide improves the corrosion resistance of the parts when they are used in etching processes. One would have been further motivated to make this modification due to the fact that the parts of Richardson et al. as modified by Ding et al. are form from anodized aluminum which has been roughened, which is the ideal substrate for the boron carbide coating taught by Shih et al.

Allowable Subject Matter

55. Claims 23-24 are allowed.

56. The following is a statement of reasons for the indication of allowable subject matter: While the plasma deposition of polymer materials such as polyimide is known,

as shown by EP0546802 (Beals et al.). However, there is no motivation in the prior art to coat a plasma exposed part of a plasma processing chamber with such a coating. Further, even if there were motivation to coat a plasma chamber part with a plasma sprayed coating, there is no teaching in the prior art that doing so would result in a coating that improves the adhesion of polymer deposits, as required by the instant claims. Accordingly, the examiner deems claims 23 and 24 to be allowable over the prior art.

Examiners Note

57. The examiner would like to sincerely apologize to the applicant for any inconvenience caused by the extended examination of this application.

Response to Arguments

58. In response to the prior office action, the applicant tendered several arguments that the examiner believes have been addressed by the new grounds of rejection set forth above. In particular, the applicant argued on the record that the combination of Richardson with Ding would effectively destroy the Richardson reference, as Richardson does not disclose or suggest the formation of coatings on the roughened surface of its chamber parts. The applicant asserts that coating the roughened parts of Richardson with the coating of Ding would change the principal of operation of the prior art invention being modified, which has been held to be not sufficient to render the claims prima facie obvious.

59. This argument is not persuasive. Richardson teaches that the adhesion of particles to the surface of a plasma chamber part is improved by roughening the surface

of the chamber part. Coating the roughened part of Richardson with the coating of Ding does not change the principal of operation of Richardson, as the coated part still retains a rough surface that Richardson deems necessary to improve the adhesion of particles to the chamber part. Further, there is strong motivation to coat the parts of Richardson with the coating or Ding, in light of the fact that Ding specifically teaches that coating chamber parts with a plasma sprayed coating **further** improves the adhesion of particles to the chamber part, as a result of the coatings ability to relieve intrinsic stressed between the chamber component and the deposited particles. Ding even teaches this benefit when the chamber part is pre roughened, like the parts of Richardson. Thus, this argument is not deemed to be persuasive.

60. The applicants have also asserted that there is no motivation to one of ordinary skill in the art to combine Richardson with Ding, as Richardson teaches that simply roughening a part of a plasma chamber is sufficient to improve the adherence of particles to the surface of the part, and does not require or suggest the additional coating of Ding. While the examiner acknowledges that Richardson does not require an additional coating, Ding clearly teaches the benefits of coating roughened parts, such as those described by Richardson, with a plasma sprayed coating. Thus, this argument is not persuasive.

61. All of the applicants other arguments have been addressed by the new grounds of rejection set forth above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nikolas J. Uhlir whose telephone number is 703-305-0179. The examiner can normally be reached on Mon-Fri 7:30 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on 703-308-2367. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-0389.

Paul Thibodeau
Supervisory Patent Examiner
Technology Center 1700

nju
June 3, 2003